



PATENT
P56525RE

IN THE CLAIMS

Please amend claims 1, 11 and 16, and add claims 21 through 51, to read as follows:

1. (Amended) A negative pressure air bearing slider, comprising:

a slider body for flying above a surface of a recording disc during relative rotation of the disc, the slider body having a principal surface for confronting the surface of the disc, said principal surface having a lead portion, a rear portion, a first side portion and a second side portion, wherein the lead portion is spaced upstream of the rear portion relative to a longitudinal direction of said slider body which is coincident with a tangential rotational direction of the recording disc, and wherein the first side portion is spaced from the second side portion relative to a lateral direction of said slider body;

first and second projections extending from said lead portion of said principal surface of said slider body to define first and second air bearing surfaces, said first and second air bearing surfaces spaced apart from each other in the lateral direction of said slider body;

a U-shaped projection extending from said principal surface of said slider body, said U-shaped projection including an arcuate front wall portion at least partially located between said first and second air bearing surfaces, said U-shaped projection further including first and second side wall portions extending from opposite ends of said arcuate front wall rearwardly toward said rear portion and outwardly toward said first and second side portions of said principal surface for defining a negative pressure cavity therein, said first and second wall portions terminating at said rear portion of said principal surface of said slider body for defining third and fourth air bearing surfaces, said

19 third and fourth air bearing surfaces spaced apart from each other along said lateral direction of said
20 slider body and spaced apart from said first and second air bearing surfaces along said longitudinal
21 direction of said slider body; a fourth projection extending from said rear portion of said principal
22 surface of said slider body, said fourth projection interposed between said third and fourth air bearing
23 surfaces and generally aligned with said longitudinal direction of said slider body; and

24 a transducer mounted on a rear edge of said fourth projection for establishing pseudo contact
25 with the disc surface while said slider body is flying above said disc surface.

1 11. (Amended) The negative pressure air bearing slider as claimed in claim 1, wherein an
2 opening is provided in said arcuate front wall portion, said opening located between said first and
3 second side wall portions and extending to said principal surface of said slider body.

1 16. (Amended) A negative pressure air bearing slider, comprising:
2 a slider body for flying above a surface of a recording disc during relative rotation of the disc,
3 the slider body having a principal surface facing the surface of the disc, said slider having a lead
4 edge, a rear edge, a first side edge and a second side edge, wherein the lead edge is spaced upstream
5 of the rear edge along a longitudinal axis of said slider body, the longitudinal axis coincident with
6 a tangential rotational direction of the recording disc, and wherein the first side edge is spaced from
7 the second side edge along a latitudinal axis of said slider body;

8 first and second projections extending from a lead portion of said principal surface adjacent
9 to said lead edge to provide first and second air bearing surfaces, said first and second air bearing

10 surfaces spaced apart from each other along said latitudinal axis and located proximal to said first
11 and second side edges of said slider body such that a gap is provided therebetween;

12 a U-shaped projection extending from said principal surface of said slider body, said U-
13 shaped projection including an arcuate front wall and first and second side walls extending from each
14 end of said front wall, each of said side walls extending rearwardly toward said rear portion and
15 outwardly toward an adjacent side edge of said slider body for defining a negative pressure cavity
16 therein, a forwardmost portion of said arcuate front wall located at least partially between said first
17 and second air bearing surfaces such that first and second passages are formed between the arcuate
18 front wall and a rear edge of said first and second air bearing surfaces, said passages communicating
19 with said gap to provide a flow path that extends from said lead portion and terminates along said
20 side edges prior to reaching a rear portion of said slider body adjacent to said rear edge thereof, said
21 first and second wall portions terminating at said rear portion of said slider body for defining third
22 and fourth air bearing surfaces spaced apart along said latitudinal axis and located proximal to said
23 first and second side edges of said slider body, the air bearing surfaces positioned about on said
24 principal surface of said slider body such that four separate and distinct positive pressure areas are
25 provided when said slider body is flying above said rotating disc; and

26 a fourth projection extending from said rear portion of said slider body, said fourth projection
27 generally aligned with said longitudinal axis of said slider body, the fourth projection including a
28 transducer mounted on a rear edge thereof for establishing pseudo contact with the disc surface while
29 said slider body is flying above said disc.

30 21. A negative pressure air bearing slider having a negative pressure cavity, comprising:
31 a slider having a body with a principal surface disposed to confront a recording surface of
32 a recording medium, said principal surface having a lead portion and a rear portion, said lead portion
33 being spaced upstream from said rear portion relative to a rotational direction of any recording
34 medium confronted by said slider, said lead portion having a front edge, said rear portion having a
35 rear edge, said front edge and said rear edge together defining boundaries of said principal surface
36 in a longitudinal direction of said slider body; and
37 a U-shaped air bearing platform defining a negative pressure cavity on said principal surface,
38 said U-shaped air bearing platform comprising a cross rail portion extending generally laterally
39 across said principal surface and first and second side wall portions extending from opposite ends
40 of said cross rail portion rearwardly toward said rear portion of said principal surface and
41 respectively terminating at a first rear termination and a second rear termination, at least one of said
42 first and second side wall portions having an arcuate portion;
43 at least one of said first rear termination and said second rear termination does not coinciding
44 with said rear edge, and being disposed upstream of said rear edge relative to said rotational direction
45 of said recording medium.

1 22. The negative pressure air bearing slider according to claim 21, further comprising:
2 a gap disposed within said cross rail portion.

1 23. The negative pressure air bearing slider according to claim 22, wherein:
2 said gap is centered with respect to a longitudinal axis of said slider body.

1 24. The negative pressure air bearing slider according to claim 22, wherein:
2 said gap is off-centered with respect to a longitudinal axis of said slider body.

1 25. The negative pressure air bearing slider according to claim 21, further comprising:
2 a recessed step disposed within said cross rail portion.

1 26. The negative pressure air bearing slider according to claim 25, wherein:
2 said recessed step is centered with respect to a longitudinal axis of said slider body.

1 27. The negative pressure air bearing slider according to claim 25, wherein:
2 said recessed step is off-centered with respect to a longitudinal axis of said slider body.

1 28. The negative pressure air bearing slider according to claim 21, further comprising:
2 a first front air bearing platform; and
3 a second front air bearing platform;
4 said first and said second front air bearing platforms being disposed on opposite sides of said
5 principal surface symmetrically about a longitudinal axis of said slider body, said first and second
6 front air bearing platforms being disposed upstream of said U-shaped air bearing platform relative

7 to a rotational direction of said recording medium.

1 29. The negative pressure air bearing slider according to claim 28, wherein:
2 a tapered surface portion is interposed between said front edge and each of said first and said
3 second front air bearing platforms, the tapered surface portion tapering from each air bearing surface
4 toward said front edge of said slider body.

1 30. The negative pressure air bearing slider according to claim 21, further comprising:
2 a rear air bearing platform accommodating mounting of a transducer, said rear air bearing
3 platform being spaced downstream of said U-shaped air bearing platform relative to a rotational
4 direction of said recording medium, and being centered with respect to a longitudinal axis of said
5 slider body.

1 31. A negative pressure air bearing slider, comprising:
2 a principal surface defining a first plane tangential to a direction of flight of said slider;
3 said principal surface having a lead portion and a rear portion, said lead portion being spaced
4 upstream from said rear portion relative to said direction of flight of said slider, said lead portion
5 having a front edge, said rear portion having a rear edge, said front edge and said rear edge together
6 defining longitudinal boundaries of said principal surface in said direction of flight of said slider;
7 and
8 a U-shaped air bearing platform having a plurality of air bearing surfaces defining a second

9 plane tangential to said direction of flight of said slider, said U-shaped air bearing platform
10 comprising first and second side wall portions extending from said lead portion rearwardly toward
11 said rear portion and respectively terminating at a first rear termination and a second rear
12 termination, at least one of said first and second side wall portions forming an arcuate portion;
13 at least one of a surface between said first rear termination and said rear edge and a surface
14 between said second rear termination and said rear edge being in said first plane.

1 32. The negative pressure air bearing slider according to claim 31, wherein said U-shaped
2 air bearing platform further comprising:
3 a cross rail portion extending generally laterally across said principal surface.

1 33. The negative pressure air bearing slider according to claim 32, further comprising:
2 a gap disposed within said cross rail portion.

1 34. The negative pressure air bearing slider according to claim 33, wherein:
2 said gap is centered with respect to a longitudinal axis of said slider body.

1 35. The negative pressure air bearing slider according to claim 33, wherein:
2 said gap is off-centered with respect to a longitudinal axis of said slider body.

1 36. The negative pressure air bearing slider according to claim 32, further comprising:

2 a recessed step disposed within said cross rail portion.

1 37. The negative pressure air bearing slider according to claim 36, wherein:
2 said recessed step is centered with respect to a longitudinal axis of said slider body.

1 38. The negative pressure air bearing slider according to claim 36, wherein:
2 said recessed step is off-centered with respect to a longitudinal axis of said slider body.

1 39. The negative pressure air bearing slider according to claim 31, further comprising:
2 a first front air bearing platform; and
3 a second front air bearing platform;
4 said first and said second front air bearing platforms being disposed on opposite ends of said
5 principal surface symmetrically about a longitudinal axis of said slider body, said first and second
6 front air bearing platforms being disposed upstream of said U-shaped air bearing platform relative
7 to said direction of flight of said slider.

1 40. The negative pressure air bearing slider according to claim 39, wherein:
2 a tapered surface portion is interposed between said front edge and each of said first and said
3 second front air bearing platforms, the tapered surface portion tapering from each air bearing surface
4 toward said front edge of said slider body.

1 41. The negative pressure air bearing slider according to claim 21, further comprising:
2 a rear air bearing platform accommodating mounting of a transducer, said rear air bearing
3 platform being spaced downstream of said U-shaped air bearing platform relative to said direction
4 of flight of said slider, and being centered with respect to a longitudinal axis of said slider body.

1 42. A negative pressure air bearing slider, comprising:
2 a slider having a body with a principal surface disposed to confront a recording surface of
3 a recording medium, said principal surface having a lead portion and a rear portion, said lead portion
4 being spaced upstream from said rear portion relative to a rotational direction of any recording
5 medium confronted by said slider with a longitudinal axis of said slider extending between said lead
6 portion and said rear portion defining a longitudinal direction of said slider and forming a tangent
7 to said rotational direction, said lead portion having a front edge, said rear portion having a rear edge,
8 said front edge and said rear edge together defining boundaries of said principal surface in said
9 longitudinal direction of said slider; and

10 a U-shaped air bearing platform defining a negative pressure cavity on said principal surface,
11 said U-shaped air bearing platform comprising an arcuately shaped cross rail portion extending
12 transversely across said principal surface and first and second side wall portions extending from
13 different opposite ends of said cross rail portion rearwardly toward said rear portion of said principal
14 surface and respectively forming a first air bearing surface terminating said first side wall portion
15 and forming a second air bearing surface terminating said second side wall portion, at least one of
16 said first and second side wall portions having an arcuate portion with said cross rail portion

17 comprising an arcuately shaped front wall oriented toward said lead portion.

1 43. The negative pressure air bearing slider according to claim 42, further comprising a gap
2 disposed within said cross rail portion.

1 44. The negative pressure air bearing slider according to claim 43, wherein said gap is
2 centered with respect to said longitudinal axis of said slider body.

1 45. The negative pressure air bearing slider according to claim 43, wherein said gap is off-
2 centered with respect to said longitudinal axis.

1 46. The negative pressure air bearing slider according to claim 42, further comprising a
2 recessed step disposed within said cross rail portion.

1 47. The negative pressure air bearing slider according to claim 46, wherein said recessed step
2 is centered with respect to said longitudinal axis.

1 48. The negative pressure air bearing slider according to claim 46, wherein said recessed step
2 is off-centered with respect to said longitudinal axis.

1 49. The negative pressure air bearing slider according to claim 42, further comprising:

2 a first front air bearing platform; and
3 a second front air bearing platform;
4 said first and said second front air bearing platforms being disposed on opposite sides of said
5 principal surface symmetrically about said longitudinal axis of said slider body, said first and second
6 front air bearing platforms being disposed upstream of said U-shaped air bearing platform relative
7 to said rotational direction.

1 50. The negative pressure air bearing slider according to claim 49, further comprised of:
2 a tapered surface portion is interposed between said front edge and each of said first and said
3 second front air bearing platforms, the tapered surface portion tapering from each air bearing surface
4 toward said front edge of said slider body.

1 51. The negative pressure air bearing slider according to claim 42, further comprising a rear
2 air bearing platform accommodating mounting of a transducer, said rear air bearing platform being
3 spaced downstream of said U-shaped air bearing platform relative to a rotational direction of said
4 recording medium, and being centered with respect to said longitudinal axis of said slider body.